

### **REMARKS**

In the Final Office Action<sup>1</sup>, the Examiner:

- a) rejected claims 1-4 and 10-12 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (U.S. Patent No. 6,906,374) in view of Matsuoka et al. (U.S. Patent No. 6,809,364, hereinafter "Matsuoka");
- b) rejected claims 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Matsuoka and further in view of Nguyen et al. (U.S. Publication No. 2004/0092095, hereinafter "Nguyen"); and
- c) objected to claims 5, 13, and 14 as being dependent upon a rejected base claim, but stated that these claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

By the present Amendment, Applicant proposes to amend claim 1 to more appropriately define their invention. Currently, claims 1-20 are pending, with claims 15-20 withdrawn from consideration and claims 1-14 under current examination.

At the outset, Applicant proposes to amend claim 13 to recite, in part, "a second insulating film formed above said MIM capacitor." Support for the proposed amendments may be found in the Specification at, for example, page 4, lines 18-19. See also Figs. 2 and 5, illustrating that the second interlayer insulating film 6 is formed above the MIM capacitor 5. Applicant's proposed claim amendments are not deemed to raise new issues requiring further consideration or search.

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<sup>1</sup> The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicant declines to automatically subscribe to any statements in the Office Action.

Applicant respectfully traverses the rejection of claims 1-4 and 10-12 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Matsuoka. A *prima facie* case of obviousness has not been established.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 4 (October 2005), p. 2100-134.

A *prima facie* case of obviousness has not been established because, among other things, Tanaka and Matsuoka fail to teach or suggest, at least, the claimed semiconductor device including "a second insulating film formed above said MIM capacitor."

Fig. 34 of Tanaka shows, among other elements, an interlayer insulation film 48 and a metal film 58 constituting a capacitor upper electrode. The interlayer insulation film 48 is separated from the metal film 58 by an insulation film 56 and a capacitor lower electrode 54. However, as shown in Fig. 34, Tanaka's interlayer insulation film 48 is not formed above the MIM capacitor (including lower electrode 54, insulation film 56, and upper electrode 58), but rather the film 48 and the capacitor are located side by side. Further, Applicant notes the Examiner's statement that "second insulating film 48 [is] formed to cover the sides of the upper metal electrode 58 of the MIM capacitor." See Final Office Action at page 2. To the extent that Tanaka's interlayer insulation film 48 covers the sides of the metal film 58, as asserted by the Examiner, Tanaka's

interlayer insulation film 48 cannot be formed above the MIM capacitor. Therefore, Tanaka fails to teach the “second insulating film formed above said MIM capacitor,” as recited in amended claim 1.

Matsuoka fails to overcome the shortcomings of Tanaka, because Matsuoka also does not teach the claimed “second insulating film formed above said MIM capacitor.” The Examiner relies on Matsuoka’s wiring lines 26 to teach a second wiring. In addition, the Examiner alleges that Matsuoka, in Fig. 22, teaches “a capacitor 23 having an upper electrode 24 is covered by a second insulating film 905/906.” Final Office Action at page 3. However, even if Matsuoka’s element 24 and layers 905 and 906 in Fig. 22 may be identified as an electrode and a second insulating film, we note that Matsuoka is entirely silent with respect to an MIM capacitor, and thus cannot teach an insulating film formed above an MIM capacitor. Accordingly, Matsuoka necessarily fails to teach the claimed “second insulating film formed above said MIM capacitor,” as recited in claim 1.

Accordingly, the Examiner’s proposed combination of Tanaka and Matsuoka fails to teach each and every element recited in independent claim 1. For at least this reason, no *prima facie* case of obviousness has been established regarding claim 1. Accordingly, claim 1 is allowable over Tanaka and Matsuoka, and claims 2-4 and 10-12 are also allowable over these references at least due to their dependence from claim 1.

Applicant respectfully traverses the rejection of claims 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Matsuoka and further in view of Nguyen. A *prima facie* case of obviousness has not been established because, among other things, the Examiner’s proposed combination of the cited references fails to teach or suggest each and every element of claim 1, from which claims 6-9 depend. Applicant

has already established above regarding claim 1 that Tanaka and Matsuoka fail to teach, at least, the claimed "second insulating film formed above said MIM capacitor." The Examiner relies on Nguyen allegedly for teaching "dielectric materials having a very low dielectric constant, such as less than about 3." Office Action at page 4. However, such teachings, even if present in Nguyen, fail to constitute a teaching of the claimed "second insulating film formed above said MIM capacitor," as recited in claim 1. Therefore, claims 6-9 are allowable over the Examiner's proposed combination of Tanaka, Matsuoka, and Nguyen.


Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-14 in condition for allowance. Applicants submit that the proposed amendments of claim 1 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, and should allow for immediate entry by the Examiner. Therefore, entry of this Amendment and a timely issuance of a Notice of Allowance are earnestly requested.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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